M-15347 US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s):	Yin S. Tang		
Title:	Lensed Tip Optical Fiber and Method of Making the Same		
Serial No.:	10/799,483	Filing Date:	March 12, 2004
Examiner:	Jerry M. Blevins	Group Art Unit:	2883
Docket No.:	M-15347US	Confirmation No.	8401

Irvine, California
May 22, 2006

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PRE-APPEAL BRIEF REQUEST FOR REVIEW

Dear Sir:

This responds to the Final Office Action mailed on January 25, 2006 and the Advisory Action mailed on May 8, 2006. Applicant includes a one-month extension of time, extending the period of response to May 25, 2006. Please enter and consider the following remarks.

REMARKS

Claims 1 and 3-22 are pending. Applicant respectfully requests reconsideration and review of the pending claims.

Applicant has filed this pre-appeal brief request for review in light of the following clear error in the January 25, 2006 Final Office Action and the May 8, 2006 Advisory Action.

1) The Thompson (U.S. 5,037,174) reference does not teach or suggest "removing material from said at least one end of the optical fiber member".

In the Final Office Action, the Examiner states, in part, that "Thompson teaches that the modifying comprises removing material from the at least one end of the optical fiber member (column 5, lines 21-30)". In the Advisory Action, the Examiner states that "Thompson teaches a method which 'pulls out' material to form a tapered end of an optical fiber (column 5, lines 21-30). Examiner reasonably interprets this pulling out of material as involving the removal of material."

Applicant respectfully disagrees. At column 5, lines 21-30, Thompson states:

> The stepwise increase in acceleration results in a jerking action that is imposed on the fiber and causes the first portion 43A and the second portion 54B thereof to separate at the separation point S, as seen from Fig. 2. The jerking action sharply changes the slope of the taper, as is best seen at reference characters 56A, 56B in the FIGS. 2 and 3A. Moreover, the jerking separation of the fiber into the first and second portion pulls out a nipple-like extension 58A, 58B of material as the fiber separates into two parts.

This is simply disclosing that the fiber is quickly pulled, resulting in a separation into two fibers and the formation of a nipple-like extension at the ends of both fibers. No where is there any disclose that material is removed from an end. The pulling action, along with exposure to the arc energy, results in the ends tapering and forming the nipple-like extensions. (Col. 4, lines 27-31, col. 4, lines 45-52, col. 4, line 63 to col. 5, line 35, col. 5, lines 41-55; Figs. 1, 2, and 3A). Based on the description of Thompson, Applicant contends that no

material is removed during the pulling. If material is actually removed, such as portions of the fiber falling off during the pulling process, the heat would have to be such that the fiber is essentially melted. With such a high heat, the nipple-like extension desired in Thompson would not likely be possible. Applicant contends that commonly known methods of forming a nipple-like extension by pulling apart fiber does NOT remove any portion of the fiber. In fact, Thompson states, at col. 5, lines 3-7, that "the arc energy is selected to apply the minimum heat necessary to raise the fiber above its transition temperature to permit the drawing to occur. Too intense of an arc energy will result in the fiber being melted through".

Accordingly, Applicant contends that it is clear error for the Examiner to assume that material is removed during the pulling process of Thompson, where there is no clear indication or even suggestion of such.

2) There is no motivation to combine Thompson with Yamane et al. (U.S. 5,459,803).

"For a proper obviousness combination, the prior art references must provide a suggestion or motivation to make such a combination." Heidelberger Druckmaschinen AG v. Hantscho Commercial Prods., Incs., 21 F.3d 168, 1072, 30 USPQ2d 1377, 1379 (Fed. Cir. 1994) *citing* Northern Telecom Inc. v. Datapoint Corp., 908 F.2d 931, 934 15 USPQ2d 1321, 1323 (Fed. Cir. 1990).

In particular, Yamane discloses an optical fiber 10 comprising "a core 11 made of a quartz-based glass and a clad 12 made of another quartz-based glass which surrounds the core." (Yamane, col. 5, lines 12-14; Fig. 4). As shown in Figs. 4-8 and 10-14, the optical fiber has an end surface that is "flat and perpendicular" to the axial direction of the fiber. (Yamane, col. 5, lines 19-29, col. 6, lines 4-9, col. 7, lines 54-59, col. 8, lines 23-27, 33-35, and 39-43, and col. 9, lines 19-30). In other words, the optical fiber of Yamane has a significant clad portion, all of which is flat at the end of the fiber. A key objective in Yamane

is having an "optical fiber with a lens which is free of any tapered portion". (Yamane, col. 3, lines 26-28 and col. 6, lines 4-8). At the middle of the fiber, the core 11 projects out from the flat portion of the clad that is either a curved or rounded shape as shown in Figs. 4-7 and 10-14, a truncated cone shape as shown in Fig. 8, or a conical shape as shown in Fig. 14. Thus, Yamane discloses a quartz-based optical fiber having a central core portion that is shaped (round, truncated cone, or conical) and an outer clad portion that is flat. Etching using HF acid provides a slower etching speed in the core portion than in the clad portion of the quartz-based glass specialty fiber "to form a projecting core of a truncated cone shape on the end surface". (Yamane, col. 4, lines 14-18 and col. 8, lines 28-35) (emphasis added). Thus, the etching of Yamane is to form a flattened portion on the end surface.

On the other hand, Thompson, as discussed above, is directed to forming an optical fiber having a nipple-like extension, which is then rounded into an aspherical shape using arc energy. (See, e.g., Thompson, col. 5, lines 21-55; Fig. 2). At no point in the fiber formation does the fiber have a truncated cone shape or a flattened shape.

Obviousness is tested by "what the combined teachings of the references would have suggested to those of ordinary skill in the art." In re Keller, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981). But obviousness "cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination." ACS Hosp. Sys. Inc. v. Montefiore Hosp., 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). Thus, "teachings of references can be combined only if there is some suggestion or incentive to do so." Id. Applicant, thereby, contends that there is no suggestion or incentive to combine Thompson and Yamane because Thompson and Yamane are directed to very different processes for forming a lens on an optical fiber, as outlined above.

Thus, for an obviousness combination, the "critical inquiry is whether 'there is something in the prior art as a whole to suggest the desirability, and thus the obviousness of making the combination.'" Fromson v. Advance Offset Place, Inc., 755 F.2d 1549, 1556, 225 USPQ 26, 31 (Fed. Cir. 1985) *quoting* Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick Co., 730 F.2d 1453, 1452, 221 USPQ 481, 488 (Fed. Cir. 1984). In other words, the "mere fact that the prior art could be so modified would not have made the modification obvious unless the prior art suggested the desirability of the modification." In re Gordon, 773 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984) *citing* Carl Schenck, A.G. v. Nortron Corp., 713 F.2d 782, 787, 218 USPQ 698, 702 (Fed. Cir. 1983). In the present case, there is not suggestion of the desirability of a combination of Thompson and Yamane because, as mentioned above, Thompson and Yamane use different processes to achieve different types of lens shapes, i.e., aspherical versus truncated cone. Etching of Yamane is to create a truncated cone shape; the pulling and heating of Thompson is to create a nipple-like extension and an aspherical shape, respectively, at the end of the fiber. As such, there would be no reason to etch the fiber using HF acid. Applicant would not even know how to modify the process of Thompson to use HF acid to etch the fiber, as the invention of Thompson is to first pull and separate a fiber into two parts to create a nipple-like extension at the two ends and to then expose the ends to arc energy to smooth out the extension and form an aspherical lens surface. Accordingly, Thompson does not suggest to one skilled in the art the desirability to combine with Yamane, and in fact, may not even make it possible to practice the invention of Thompson if the combination with Yamane is actually practiced.

Furthermore, the "statute, §103, requires much more, i.e., that it would have been obvious to produce the claimed invention at the time it was made without the benefit of hindsight." Orthokinetics, Inc. v. Safety Travel, Chairs, Inc., 806 F.2d 1565, 1575, 1 USPQ2d 1081, 1087 (Fed. Cir. 1986). "When prior art references require selective

combination by the court to render obvious a subsequent invention, there must be some reason for the combination other than the hindsight gleaned from the invention itself." Interconnect Planning Corp. v. Feil, 774 F.2d 1132, 1143, 227 USPQ 543, 551 (Fed. Cir. 1985) *citing* ACS Hosp. Sys., Inc. v. Montefiore Hosp., 732 F.2d 1572, 1577 & n.14, 221 USPQ 929, 933 & n.14 (Fed. Cir. 1984). Applicant believes the motivation to combine Thompson with Yamane is derived from Applicant's invention since there is no suggestion in the cited references for the desirability of such a combination, as discussed above.

The Examiner states that the "test for combining references is what the combination of disclosures taken as a whole would suggest to one of ordinary skill in the art" and that "references are evaluated by what they suggest to one versed in the art, rather by their specific disclosures". Even assuming this broad interpretation is accurate, Applicant contends that those skilled in the art would NOT combine the two references, since even what they "suggest" would not motivate anyone to combine the two, as clearly described above.

Therefore, Applicant believes it is clear error to combine the Thompson with Yamane.

CONCLUSION

For the above reasons, pending claims 1 and 3-22 are in condition for allowance and allowance of the application is respectfully requested.

Certification of Facsimile Transmission
I hereby certify that this paper is being facsimile transmitted to the U.S. Patent and Trademark Office on the date shown below.

Monique M. Butler — May 22, 2006 (Date of Signature)

Respectfully submitted,

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